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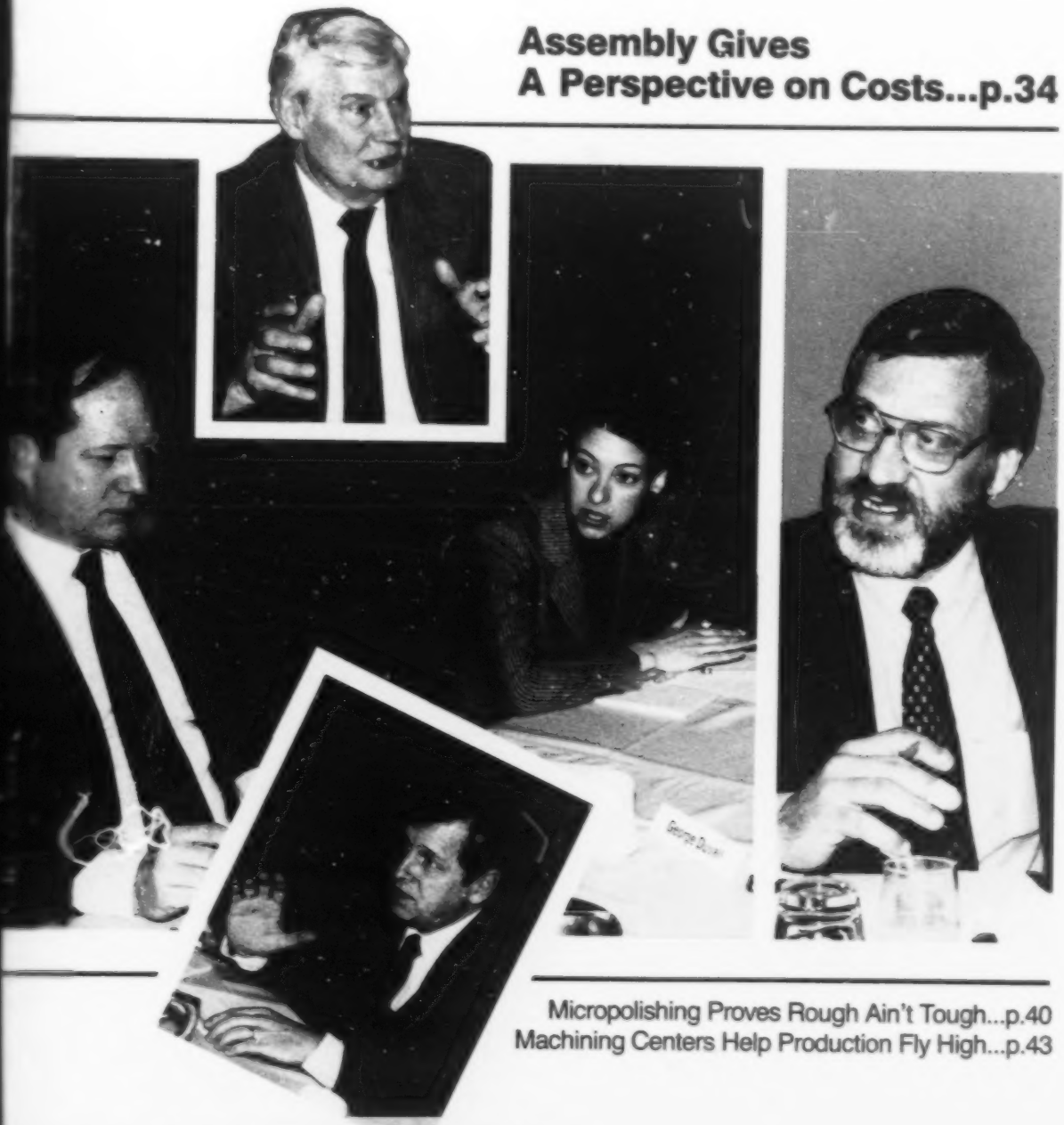

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Assembly Gives a Perspective on Costs

PRODUCTION Round Table participants conclude that a careful look at assembly operations can tell a lot about the efficiency of all prior fabrication operations, product design, preformance of outside suppliers, and more 34

Micropolishing Proves Rough Ain't Tough

Tighter part tolerances and greater durability make micropolishing an important process option 40

Machining Centers Help Production Fly High

Aerospace manufacturer is setting new production standards with three 5-axis CNC machining centers 43

Control Is the Name of the Game

Taming the countless production control variables is the vital job assigned to an integrated blend of three sophisticated control systems 46

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First-Part Inspection Slashes Scrap

CNC bridge-type coordinate measuring machine reduces part inspection time by 90% and slashes scrap by 80% 55

International Tool & Manufacturing Show

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THE COVER:

Round Table participants pinpoint dimensional tolerances, material handling, inventory control, consistent part quality, vendor relationships and strategic planning as major factors requiring attention in order to provide efficient assembly operations.

NEXT MONTH:

Is the quality push for real? Several U.S. manufacturers and suppliers say YES. Efforts of large and small companies will be detailed along with the results and overall benefits being obtained.

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China in Buying Mood

At a 7000-sq-ft mini-machine tool show in Shanghai (less space than some of the booths at IMTS events in Chicago) orders were placed for $10.5-million worth of equipment with another $30 million to follow.

The order figures are from an independent survey conducted by a representative of the U.S. Department of Commerce. The show, "The Second U.S.A. Machine Tool Exhibition," was sponsored by the National Machine Tool Builders' Assn., also sponsor of the biennial IMTS. James A. Gray, NMTBA president, says, "We don't yet know the total attendance but we had 22,000 on one day. Based on the success of this exhibition, we plan to go back with another larger one in 1986, and the Chinese representatives are already working to help us."

Only 23 companies exhibited but products ranged from CNC machining centers, robots, grinding and turning machines to EDM, sawing equipment, gear cutting machines and cutting tools.

Abrasives Grind Away

An Abrasive Industry Forecast by Robert N. Hamilton, vice president, Abrasives Marketing Group, Norton Co., Worcester, MA, predicts 1985 will be a good year for the abrasives industry, with strong emphasis on product development and growth in new markets.

Grinding wheels made with CBN (cubic boron nitride) abrasive will continue to grow faster than traditional abrasive products. The focus will be on developing highly specialized vitrified and metal bonds for specific production applications.

Creep-feed grinding will also continue to grow as the number of machines suitable for this method increases. This type of grinding is a good example of an application where process technology is as important as product research.

High performance products—both bonded and coated—based on new generations of zirconia alumina will come into use. Major development work will be done on backings both stitched and film types.

The electronics industry and the increasing use of ceramics throughout industry will open new market areas that offer high growth potential.

Air Force To Link Artificial Intelligence and Manufacturing

Dr. Vincent J. Russo, director of Manufacturing Science programs for Aeronautical Systems Div.'s Materials Laboratory at Wright-Patterson AFB, OH, heads a team of scientists that hopes to interest industry in artificial intelligence (AI) programs for batch manufacturing.

The Air Force seeks industry support for an Institute for Artificial Intelligence in Manufacturing to be established at a mutually determined university and serve as a national resource center for research into AI concepts for manufacturing. The Institute will also become a new source of people trained in both AI and manufacturing.

Flexible Manufacturing's Future

Flexible manufacturing will improve U.S. industrial productivity over the next decade, but flexible manufacturing systems will not be widespread, indicates The Yankee Group, a Boston-based market and technology research firm.

Seen as a progression from NC machine tools through flexible manufacturing cells and finally FMSs, the development is one that not all manufacturers will adopt. As seen in the chart, only a few hundred will install full systems in the next five years. However, The Yankee Group estimates the market for FMSs and FMCs will rise sharply to $1.8 billion in 1990 from last year's $262 million.

In 1984, 56 percent of all FMSs were used for manufacturing machinery and 41 percent for manufacturing transportation components. Predictions call for the construction and material handling industries to comprise 12 percent of the user market by 1990. ■